

FIG. 1

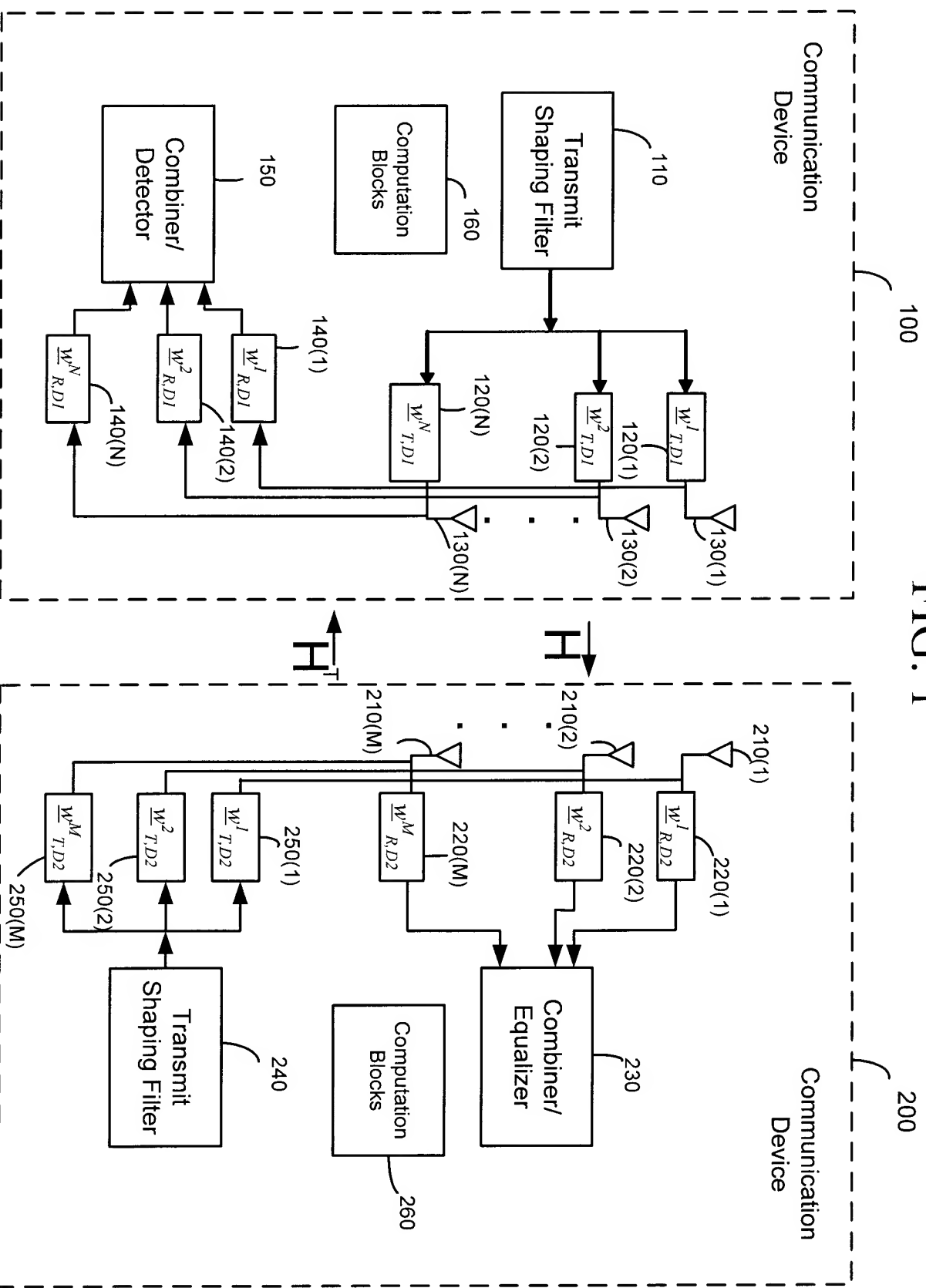


FIG. 2

$$\underline{h}^{\ddot{y}} = \left( h_0^{\ddot{y}}, h_1^{\ddot{y}}, \dots, h_{L-1}^{\ddot{y}} \right)^T \quad \text{Channel Response Vector}$$

$$\begin{array}{l} \text{Channel Response Matrix} \\ H_{ij} = \end{array} \begin{bmatrix} h_0^{\ddot{y}} & 0 & 0 & 0 & 0 \\ h_1^{\ddot{y}} & h_0^{\ddot{y}} & 0 & 0 & 0 \\ \cdot & h_1^{\ddot{y}} & h_0^{\ddot{y}} & \cdot & \cdot \\ \cdot & \cdot & h_1^{\ddot{y}} & \cdot & \cdot \\ h_{L-1}^{\ddot{y}} & h_{L-1}^{\ddot{y}} & \cdot & \cdot & h_0^{\ddot{y}} \\ 0 & 0 & h_{L-1}^{\ddot{y}} & h_1^{\ddot{y}} & \cdot \\ 0 & 0 & h_{L-1}^{\ddot{y}} & \cdot & \cdot \\ \cdot & 0 & 0 & \cdot & \cdot \\ \cdot & \cdot & 0 & \cdot & \cdot \\ 0 & 0 & 0 & \cdot & h_{L-1}^{\ddot{y}} \end{bmatrix} = \begin{bmatrix} \underline{h}^{\ddot{y}} & 0 & 0 & 0 & 0 \\ 0 & \underline{h}^{\ddot{y}} & 0 & 0 & 0 \\ 0 & 0 & \underline{h}^{\ddot{y}} & \cdot & \cdot \\ \cdot & 0 & 0 & \cdot & \cdot \\ 0 & 0 & 0 & \cdot & 0 \\ 0 & 0 & 0 & \cdot & \underline{h}^{\ddot{y}} \end{bmatrix}$$

# FIG. 3

Transmit Filter Matrix for Antenna i

$$\begin{aligned}
 & \text{Transmit Antenna Filter Super Matrix} \\
 & \mathbf{W}_{T,Dl} = \begin{bmatrix} \mathbf{W}_{T,Dl}^1 \\ \mathbf{W}_{T,Dl}^2 \\ \vdots \\ \mathbf{W}_{T,Dl}^N \end{bmatrix} \quad \mathbf{W}_{T,Dl}^i = \begin{bmatrix} w_{T,Dl,0}^i & 0 & 0 & 0 \\ w_{T,Dl,1}^i & w_{T,Dl,0}^i & 0 & 0 \\ \cdot & w_{T,Dl,1}^i & w_{T,Dl,0}^i & \cdot \\ w_{T,Dl,LTD-1}^i & w_{T,Dl,LTD-1}^i & w_{T,Dl,LTD-1}^i & w_{T,Dl,LTD-1}^i \end{bmatrix} \\
 & = \begin{bmatrix} \underline{w}_{T,Dl}^i & 0 & 0 & 0 \\ 0 & \underline{w}_{T,Dl}^i & 0 & 0 \\ \cdot & 0 & \underline{w}_{T,Dl}^i & \cdot \\ 0 & \cdot & \cdot & \underline{w}_{T,Dl}^i \end{bmatrix}
 \end{aligned}$$

Transmit Filter Super Vector for N Antennas of First Communication Device (D1)

$$\underline{w}_{T,Dl} = \begin{bmatrix} \underline{w}_{T,Dl}^1 \\ \underline{w}_{T,Dl}^2 \\ \underline{w}_{T,Dl}^3 \\ \vdots \\ \underline{w}_{T,Dl}^N \end{bmatrix}$$

Transmit Filter Sub-Vector for Antenna i of D1

$$\underline{w}_{T,Dl}^i = \begin{bmatrix} w_{T,Dl,0}^i \\ w_{T,Dl,1}^i \\ w_{T,Dl,2}^i \\ \cdot \\ \cdot \\ \cdot \\ w_{T,Dl,LTD-1}^i \end{bmatrix} \quad \text{LTD1}$$

# FIG. 4

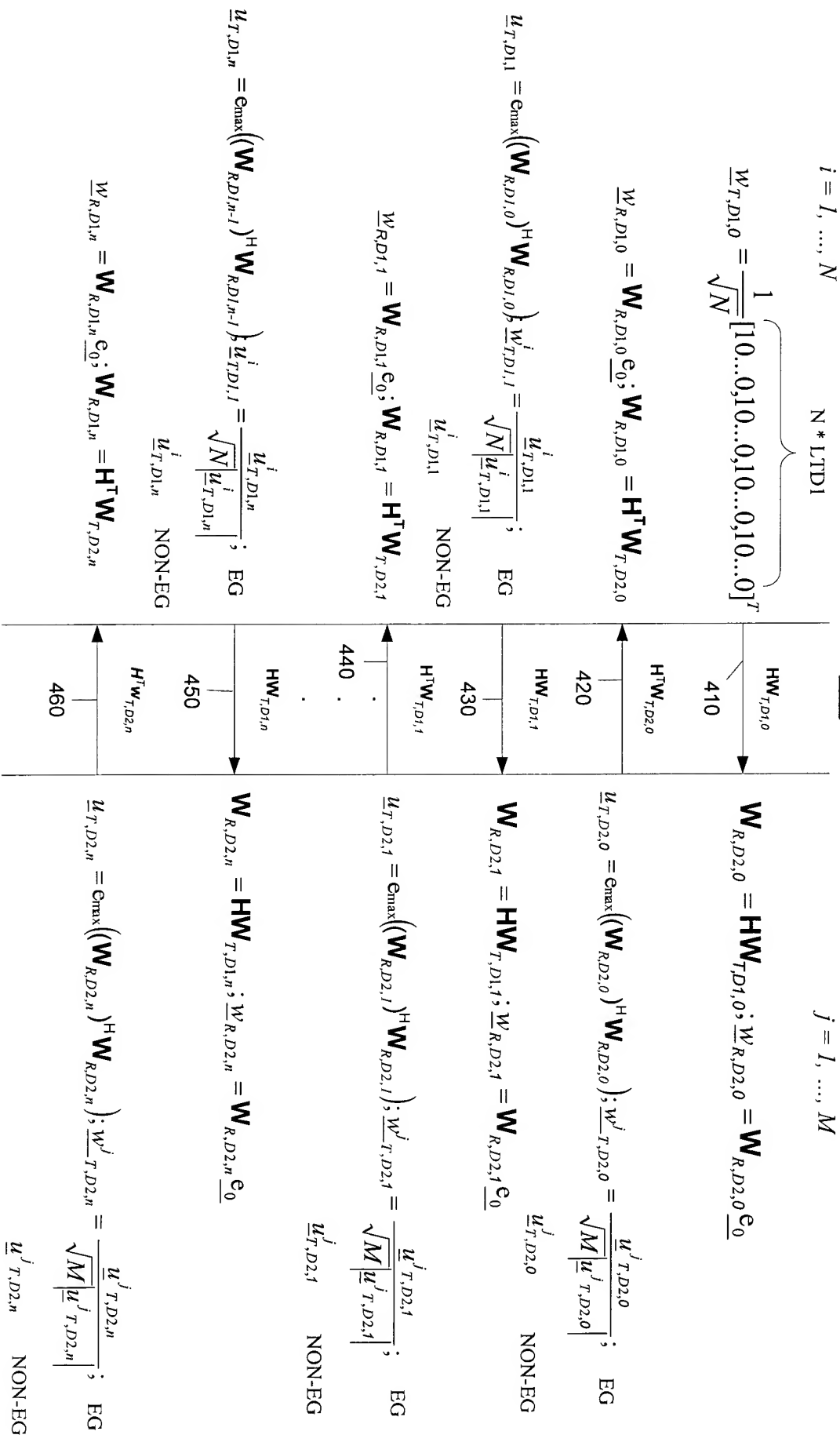


FIG. 5

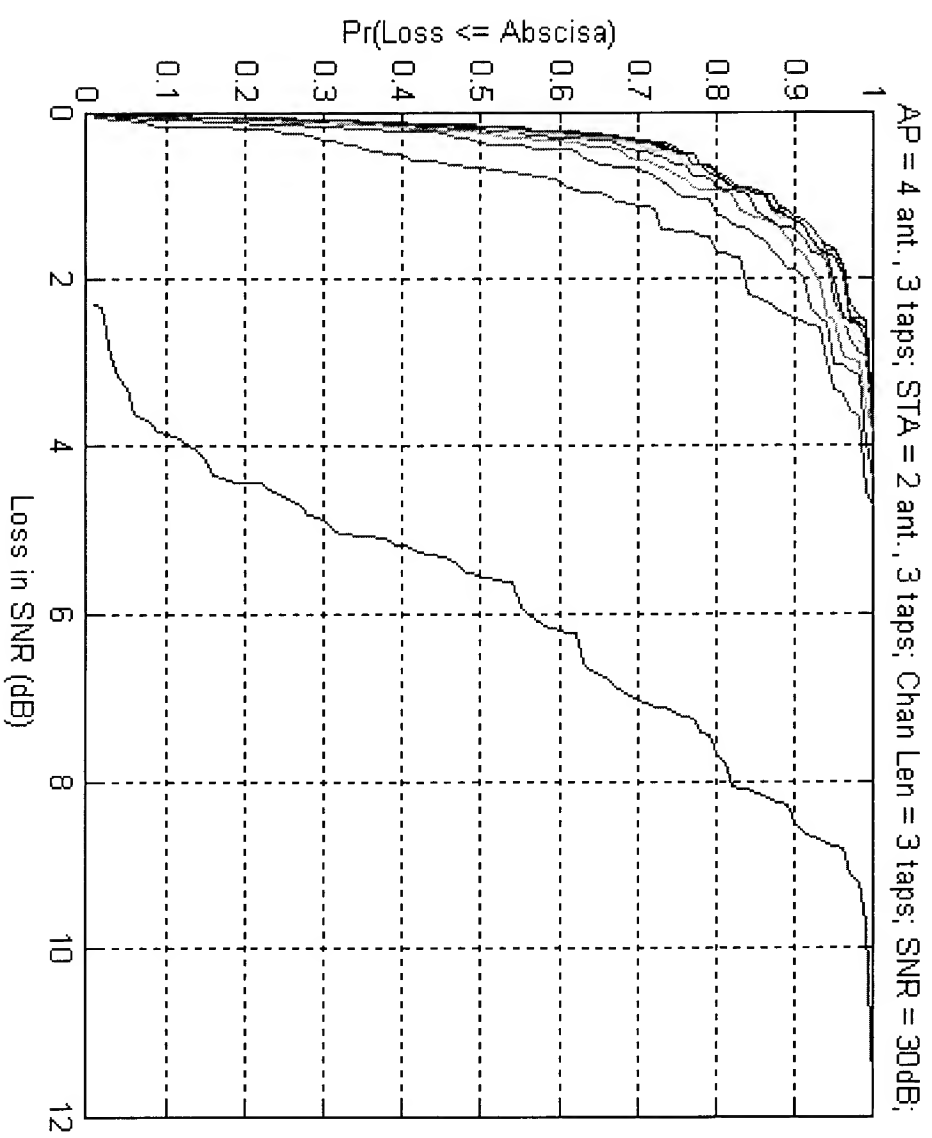


FIG. 6

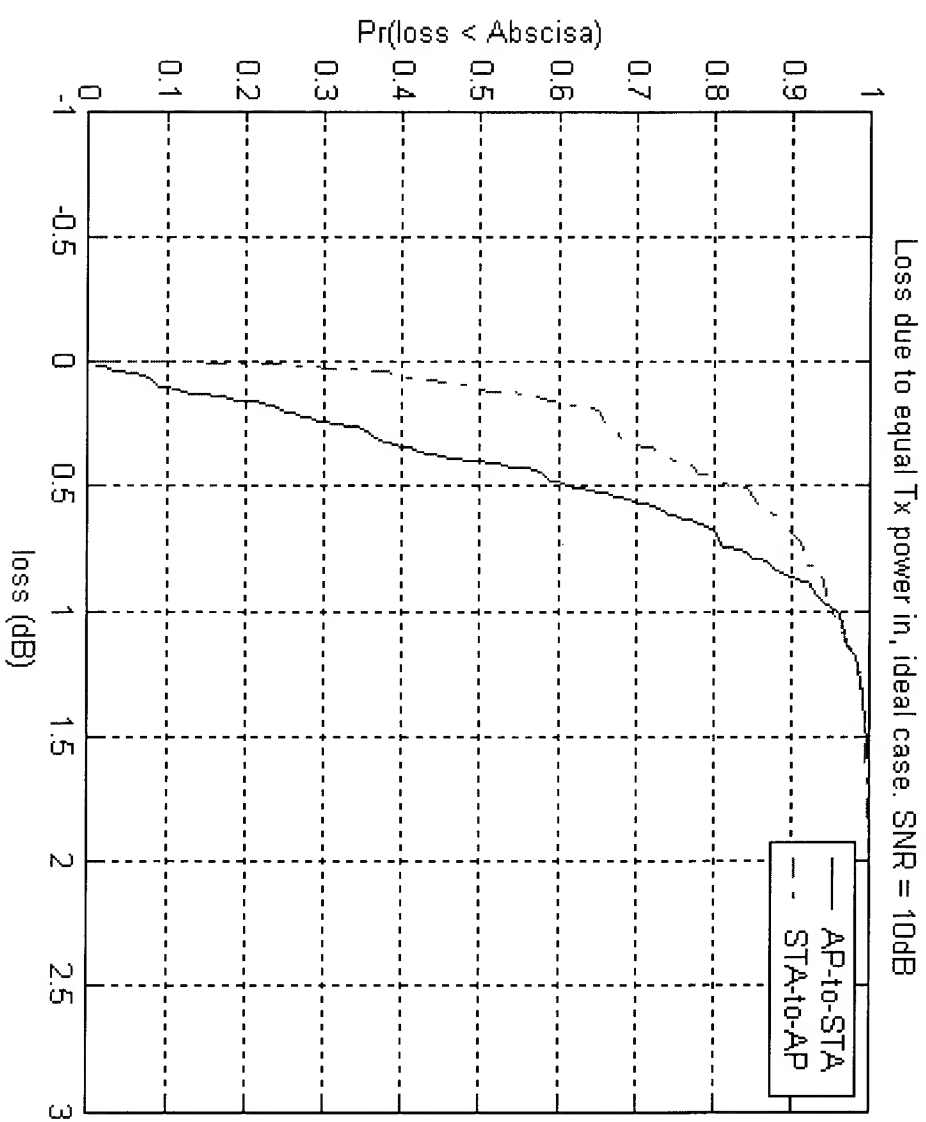


FIG. 7

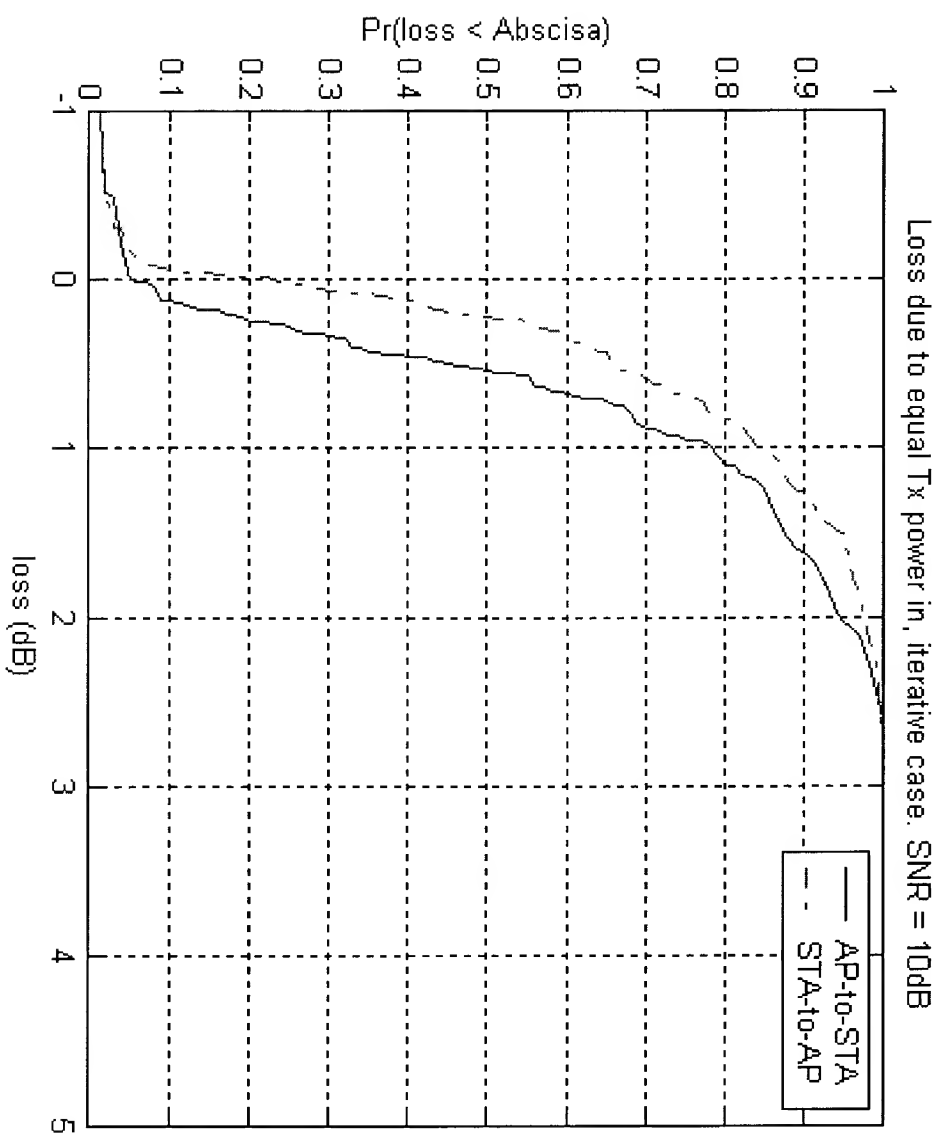


FIG. 8

